PARENTAL PERCEPTIONS AND BARRIERS TO A HEALTHIER LIFESTYLE AND PHYSICAL ACTIVITY AMONG SCHOOL-AGED CHILDREN IN OKLAHOMA

By

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Bachelor of Science in Nutrition

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Tahlequah, Oklahoma

2006

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
July, 2008

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CHAPTER I

INTRODUCTION

Families in the United States currently face many challenges that influence the efforts to engage in healthy behaviors. Parents are often influential role models, policy makers, and change agents in the home (Dietz & Robinson, 2005). Parents can control the home environment, monitor their children's behaviors and set goals for the family or reward successful behavioral changes. Parents can also become influential role models and address problems to overcome, barriers to change, and apply their parenting knowledge to influence a household that will practice healthy behaviors (Dietz & Robinson, 2005). Some challenges many parents face include the stresses of daily living and time constraints that make healthful eating and daily physical activity difficult for many families to achieve (Devine, Connors, Sobal, Bisogni, 2003).

Childhood overweight is associated with multiple health related problems (Center for Disease Control, 2008). Overweight children may experience health consequences which may pose risk for weight related health problems in adulthood (CDC, 2008). Overweight children are at risk for psychosocial disorders, which may lead to low self-esteem and hinder academic and social functioning into adulthood (Swartz & Puhl, 2003). Other weight related diseases include cardiovascular disease, asthma, sleep apnea and type II diabetes (Swartz & Puhl, 2003).

A greater proportion of children are overweight than ever before. This is a concern because it is well known that overweight children are much more likely to become obese adults (Whitaker, Wright, Pepe, Seidel & Dietz, 1997). NHANES data indicates that overweight in children ages 2-5 years has increased from 5.0% to 13.9%, for children ages 6–11 years from 6.5% to 18.8, and for youth age 12–19 years from 5.0% to 17.4%. More importantly, Oklahoma continues to have one of the highest proportions of overweight children. Recently, a report released by Trust for Americans Health, indicated Oklahoma was the 17th highest state of overweight youth ages 10-17 (Trust for Americans Health, 2007). According to the CDC, estimates are that 15% of Oklahoma youth are classified as overweight, and another 16% are classified at-risk-for-becoming overweight. (CDC, 2007)

There are many causes of childhood overweight. Many intervention strategies have focused on a wide range of factors including the home environment, genetic factors, and the larger society (Stang, Rehorst & Golicic, 2004). One important critical intervention target is the family setting. Scientific evidence has identified many dietary and physical activity behaviors that families can adopt to implement a healthful weight for their children (Stang et al., 2004). Parents can influence many diet and physical activity behaviors that are associated with a child's possibility of developing obesity (Birch & Fisher, 1998). One prevention strategy is to enhance the effectiveness of parenting practices related to diet and physical activity behaviors of their children (Davison, Cutting & Birch, 2003). Although it is known that parents cannot control all aspects of a child's day, they can moderate the type and availability of foods, feeding practices, the frequency of television and video game usage, and access to physical activity opportunities (Birch & Fisher, 1998; Davison et al., 2003). Parental modeling of both eating habits and physical activity can also help shape

children's values, beliefs, and behaviors (Birch, Fisher, 1998; Davison et al, 2003). Also, eating dinner with the family has been associated with a more healthful diet, including more fruits and vegetables, fewer fried foods, less soda, less fat, and more micronutrients (Gillman et al., 2000).

Dietary recommendations include providing children with nutrient-dense foods and beverages and reducing children's access to high-calorie foods both when eating at home and at restaurants (CDC, 2008). Physical activity recommendations include providing opportunities and encouragement for children to be physically active while reducing children's television and video game time. Parental modeling of healthful eating and physical activity practices is recommended to reinforce these patterns in their children (Clark, Goyder, Bissell, Blank & Peters, 2007).

Many lifestyle interventions are designed to encourage parents to promote healthier lifestyles for their families. One strategy used is to educate parents of ways to incorporate more activity and healthier lifestyles using resources available to them (Davidson, Cutting & Birch, 2003). If parents are unwilling or unable to change family behaviors, then interventions encouraging healthier family lifestyle behaviors are unlikely to be effective. Family-based and school-based programs which address the physical environment such as portion control, physical activity opportunities, and mealtime structure may be more effective in the prevention of childhood obesity (Ritchie, Crawford, Hoelscher & Sothern, 2006). Many researchers have proven intervention programs which include the promotion of physical activity, parent training/modeling, behavioral counseling, and nutrition education for children to be more effective in the prevention of childhood obesity (Ritchie

et al., 2006). Therefore, there is an increased need for family based intervention programs to be implemented.

A significant body of literature focuses on children's diet, feeding regimens, and physical activity levels. The literature points to specific dietary and physical activity behaviors that may encourage healthful weight status. Many reports indicate children's food preferences are influenced by parental eating habits (Gillman et al., 2000). Researchers hypothesize that food preferences acquired in early childhood tend to be continued into adulthood Therefore, obesity prevention and treatment should focus on early involvement of parents and promotion of healthful eating and physical activity. Parental nutrition knowledge is essential for monitoring children's eating habits, identifying high-calorie foods, implementing physical activity routines, and understanding the long-term risks of overweight children (Lindsay, Sussner, Kim & Gortmaker, 2006).

Although there is an increasing amount of research investigating interventions to improve the level of activity and healthful diets among children and their families, there continues to be an increase in overweight children (McCaffree, 2003). Assessing parental nutrition knowledge, practices, attitudes, perceptions, and barriers to intervention is an important first step to promote healthier family lifestyles.

Objectives

The purpose of this study is to assess parental perceptions to promote a healthier and more active lifestyle among their families. The objectives of this study include: (1) to determine the perceptions, opinions, beliefs, and attitudes of parents regarding child healthy eating practices and physical activity and (2) identify barriers to a more active and healthier lifestyle among families and (3) determine parental healthy eating and physical activity practices. Information gained from this study can be used as a foundation for educators to develop interventions which allow parents to implement healthy lifestyle behaviors.

Assumptions

The following assumptions need to be considered before drawing conclusions from the present study. One of the major assumptions of the study was that participating parents would provide honest responses and perceptions to the questions asked during the focus group. Secondly, that the parent's understand what constitutes a healthy food versus an unhealthy food. Furthermore, that parent's are concerned with the eating behaviors and physical activity routines of their children.

Limitations

In interpreting the findings of the present study, it is first important to acknowledge the limitations. Limitations included parental self-reporting of behavior, dietary intake, meal structure, and physical activity routines of their children which may not be actual. Also, the use of convenience sampling and small sample size (n=31 parents) limits how the data can be generalized to a larger population. Furthermore, it should be recognized that data for this study is geographically restricted to Southeast Okalahoma. In addition, it was very challenging to rely on participant's arrival to the focus groups of the present study. An effort was made to restrict any bias about participants when analyzing and reporting this data. Nevertheless, within the limitations of the study design, the findings provide important information that could be used to design more effective family-based physical activity and healthy eating interventions.

CHAPTER II

REVIEW OF LITERATURE

Introduction and Childhood Overweight Statistics

Childhood and adolescent overweight is increasing rapidly (CDC, 2008). Obesity is a complex chronic disease state involving interactions between genetic, physiological, metabolic and environmental influences (CDC, 2008). Data from the Bogalusa Heart Study indicated that common medical conditions in overweight children include hypertension, type 2 diabetes, orthopedic problems, trouble sleeping and depression (Freedman, Khan, Dietz, Srinivasan & Berenson, 1999).

Childhood overweight or at risk for becoming overweight is measured using the Body mass index (BMI) for children and adolescents (ages 2-19 years) (CDC, 2007). BMI is a measure of weight in relation to height that is used to determine weight status. The resulting measure is plotted on the CDC growth chart to determine the child's corresponding BMI-for-age percentile (Kuczmarski et al., 2002). Overweight is defined as a BMI at or above the 95th percentile for children of the same age and sex (CDC, 2007). At risk for overweight is defined when children have BMI values between the 85^{th} and 95^{th} percentile (CDC, 2007). This definition is based on the 2000 CDC Growth Charts for the United States (Kuczmarski et al, 2002). BMI is used as an accepted screening tool for the

assessment of body fatness in children and adolescents. However, BMI is not a direct measure of body fatness, therfore may not be used as a diagnostic measure (CDC, 2007).

Data from two NHANES surveys, (National Health and Nutrition Examination Survey) (1976–1980 and 2003–2004) show the prevalence of overweight children is on the rise. These reports indicated the prevelance of overweight among children ages 2-5 years has increased from 5.0% to 13.9%. Among children ages 6–11 years, the prevelance of overweight has increased from 6.5% to 18.8%, 12–19 years, the prevelence of overweight has increased from 5.0% to 17.4% (CDC, 2007). A report was released by Trust for Americans Health (2007), which indicated Oklahoma was ranked as the 17th highest state for overweight youth ages 10-17The CDC has indicated that 15% of Oklahoma youth are estimated to be overweight, and another 16% are at risk for becoming overweight (CDC, 2007). The National Health and Nutrition Examination Survey (NHANES) reported 17.1% of U.S. children are overweight and that an additional 15% of children are at risk for becoming overweight (Flegal, Carroll, Ogden & Johnson, 2002).

It has been suggested that overweight children and adolescents are much more likely to become obese in adulthood (Whitaker et. al., 1997). Whitaker et al., (1997) reported that approximately 80% of children who were overweight at age 10-15 years were obese adults at age 25 (Whitaker et al., 1997). Freedman, Khan, Dietz, Srinivasan & Berenson (2001) found that 25% of obese adults were overweight as children. This data presents alarming factors as current trends of overweight children poses many health risks for the future generation.

Parental Perceptions and Contributions to Childhood Overweight

Increasing sedentary lifestyles among families continue to rise contributing to the prevalence of overweight and at-risk for overweight children (Epstein, Paluch, Gord Dorn, 2000). Obtaining a better understanding of parental perceptions is needed to gain parents insight regarding children's physical activity level and improving the management of overweight and at-risk for overweight children.

NASPE (National Association for Sport and Physical Education), surveyed parents to identify their views of children's health and fitness. Participants included a nationally representative sample of 2,038 adults, 573 parents (50% men, 50% female) living in private households. The study sought to determine if a correlation existed between parental perceptions and the rise of childhood obesity. Parents were given five factors and asked to rank the importance of each. Over 50% of parents selected lack of physical activity or too many sedentary activities as the most important cause for the rise in childhood obesity. Parents reported the following contributing factors to sedentary activities: 29% lack of adequate physical activity outside of school, 17% too much TV viewing, 4% lack of school physical education programs and 2% computer time. In addition, 46% of parents selected eating habits as the main contributing factor to childhood overweight (NASPE, 2003).

Parents were also asked how responsible they believed they were for their children's weight and physical activity at various ages. Practically all parents (91%) thought they had a great deal of responsibility for the weight and physical activity of children under age six, while parents perceived their responsibility declined for older children. Nearly (80%) of parents believed they had a great deal of responsibility for their 6-11 year olds weight and physical activity, whereas, only 43% thought they had a great deal of responsibility for

children ages 12-17 (NASPE, 2003). This data indicated that many parents are aware of their contribution to the rise in overweight children. It is clear that as children age into adolescents (ages 12-17), parents feel their level for responsibility to children's food and physical activity level declines.

Nutritional Impact of Diet on Childhood Overweight

Diet is a major environmental factor in the etiology of childhood overweight and at-risk for overweight children (Birch & Fisher, 1998). Children's dietary intake is an important factor because diet accounts for a wide range of potential effects in children's overall quality of life. Childhood is a time to acquire food preferences, which are often carried into adulthood. Children's diets may be influenced by parents, friends, school, media, and their own tastes and preferences (Lindsay, Sussner, Kim & Gortmaker, 2006). Parental influence is thought to be the strongest in early childhood when parents act as providers, enforcers, and role models (McCaffree, 2003). Nicklas et al., (2001) reported parents can influence children's dietary practices in at least five areas: availability and accessibility of foods, meal structure, adult food modeling, food socialization practices and food-related parenting style.

Klesges et al., (1991) early observational study determined that parental "monitoring" influenced children's food selection. When children ages 4-7 years were allowed to choose freely from a variety of foods, they selected a large number of foods high in added sugar. When the children were told that their mothers would be monitoring their food choice, children's choices were significantly lower in added sugar than before ($p < 0.05$). The study concluded when mothers actually monitored their children's food choices, their

children's food choices would be significantly lower in total calories, saturated fat and salt (Klesges et. al., 1991).

NASPE (2003) conducted a survey among parents which identified a number of strategies parents use to get their children to eat balanced diets. Strategies included cooking or preparing nutritious meals (92%), talking to children about food choices (77%), serving as a role model by eating a healthy balanced diet (76%), and restricting high caloric foods and beverages from their home (50%) (NASPE, 2003). Parental nutrition knowledge is essential for monitoring eating habits of children, identifying high-calorie foods and understanding the long-term risks of childhood overweight. Parents with good dietary awareness and nutrition knowledge are more likely to make healthy food choices for their children (Clark et al., 2007).

Introducing New Foods to Children

Parents are often bombarded with nutritional information to encourage and provide a well balanced diet for their children. However, it is well known that children do not immediately or willingly accept new foods that are not high in sugar content (Sullivan & Birch, 1994). This may pose many challenges for parents who may label their child as a picky eater, which may lead to a decline in parents promoting healthier food choices. It is important for parents to realize that children's food preferences are learned through repeated exposure to foods. Sullivan and colleagues (1994) have identified a minimum of 8 to 10 exposures of tasting a food for children to develop an increased preference for unfamiliar food items. Parental response to their child's food rejection poses many consequences for their child's early food acceptance. Few parents recognize that rejection of a food item is normal, and it may take time for their child to adopt food preferences. Stratton and Bromley (1999) conducted a self-reported study which indicated that parents feel they have little control over the food preferences of their child. Researchers also identified that parents tended to emphasize more on providing family meals based on food preferences, versus focusing on well balanced nutritious meals. Many parents are unaware of repeated food exposure for children to acquire a taste and preference for a particular food item. Parents may assume dislike of a particular food item that their children have rejected, after which they have only served on a couple of occasions. As a result, parents often serve preferred foods, versus continued exposure to the foods their child has rejected on a couple of occasions (Stratton & Bromley, 1999). Parents need to become aware of the importance of repeated food exposure for their child to adopt food preferences.

Frequency of Fast Food Consumption

Fast food has become a regular part of the American diet. The current trend of children's diets includes a rise in fast food consumption, larger portion sizes, increased beverage consumption, meal frequency, and school meal participation (ADA, 2004). There is a direct relationship between the "obesity epidemic' and the rise in portion sizes in today's society. Restaurants and fast food chains continue to offer the "super size" meal deal, with the idea that you are getting more food for the money (CDC, 2007). However, the restaurant business cannot shoulder all the blame for increased portion sizes. Other contributing factors include vending machines, which offer a variety of unhealthy food options. The grocery store continues to offer larger and larger portion sizes that contain multiple servings, while the recommended serving size of a 1 oz. bag of chips or an 8 ounce soft drink is harder to find (CDC, 2007). Even those families who choose to not dine out frequently are confronted with larger portion sizes. Young and Nestle (2002), conducted a study looking at the current weight of ready-to-eat foods and compared them with past weights using data from manufacturers. Researchers reported that portion sizes began increasing in the 1970's and have continued to do so through today to the point where most exceed federal serving size standards (Young & Nestle, 2002). Americans are surrounded by larger portion sizes for a cheaper price. However, many are not aware of the detrimental effects upon their families' health.

Research has identified that children are consuming larger portion sizes with an increase in fast food consumption (Wilson, Enns & Goldman 1998). Wilson et al., (1998) estimated that 68% to 75% of US children exceed the current dietary recommendations for intake of total and saturated fats. It has been estimated between 1970 and the late 1990's that the daily caloric intake of American's diet has increased an extra 500 calories daily (Nestle, 2002). Researchers have hypothesized that one reason to account for the increased simple carbohydrate and saturated fat consumption is related to the decline of at home family meals (Gillman et al., 2000).

The traditional pattern of the family eating at the kitchen table continues to decline as many families have adopted fast-paced lifestyles. Fewer families are able to eat meals together, leading to an increase in fast food consumption. The increase is evident by the number of eating establishments in the United States which has increased by 75 percent between 1977 and 1991 (US Bureau of the Census, 1994). Even though there are many restaurant choices, many families choose fast food for the convenience, cost and large portion sizes.

Researchers have determined as children age they consume a higher proportion of meals away from home. It was reported that on average almost one-third of youth ages 4-19 eat fast food on a typical day (Bowman, Gortmaker, Ebbeling, Pereira &Ludwig, 2004; Guthrie, Lin & Frazao, 2002). Other studies have found youth ages 11-18 eat fast food on average twice a week (Paertakakal, Ferdinand, Champagne, Ryan & Bray, 2003). Children consuming fast food had higher intakes of fat, saturated fat, cholesterol, sodium, and lower intakes of fruit and vegetable consumption than those who did not (Guthrie,

Biing-Hwan & Frazao, 2002). In a hectic society, busy family routines foster a need for quick and convenient meals and many prevent preparation of healthful dinners at home.

Family Meal Time

Family meal time is associated with many benefits among school age children and adolescents. The family meal provides a quality diet with key nutrients, family communication, improved school, and psychological performance (Anderson, Crespo, Bartlett, Cheskin & Pratt, 1998). According to the 2003 National Survey of Children's Health, only 50.5% of Oklahoma families ate dinner together everyday during the past week prior to completing the survey. While 27.5% reported eating together as a family on 4-6 days, another 17.3% participated in family meal time 1-3 days and 4.7% reported no family meal time on any day of the week (National Survey of Children's Health, 2003). For many families, a decline in family meal time has become a common trend in today's fast-paced society. Researchers conducted a survey in the 1990's, which indicated large proportion of parents consider eating dinner with their children as very important compared with other activities. More than 80% of parents rank eating dinner together as the most important activity (Bruskin Goldring Research, 1996).

Despite the importance of children eating dinner with their families, the proportion of families participating in family meal time is declining. Gillman et al., (2000) conducted a cross-sectional national convenience sample of 8,677 girls and 7,525 boys ages 9-14 years old, who were children of the participants in the ongoing Nurses Health Study II. The

purpose of this study was to examine the relationship between the frequencies of eating dinner with the family, and to measure the diet quality of those meals. A self-administered survey was mailed to all participants to measure food and nutrient intakes, servings per day of selected foods, and daily intake of macronutrients/micronutrients. Results from this study reported that 17% of children never ate dinner with family or only on some days, 40% reported most days and 43% reported eating dinner with the family every day. There was a decline in the frequency of family meals among older children. More than 50% of 9 year olds in this study reported eating with the family every day, whereas only 33% of the 14 year olds reported participating in family meal time.

The study also examined the diet quality associated with the frequency of family meal time on most days compared with never or some days. Subjects who ate family dinner every day had 0.8 more servings of fruit and vegetables, than those who ate family dinner never or some days. Logistic regression results showed a 45% increase in odds of eating at least 5 daily servings of fruit and vegetables in participants who ate family dinner on most days (Gillman et al., 2000). Also, a 30% reduction in the odds of eating any fried food away from home. Participants who ate family dinner more frequently reported slightly higher energy intakes and substantial higher intakes of several nutrients. It was concluded that family meals are associated with higher intakes of several nutrients such as fiber, calcium, and folate with a decrease in saturated fats as percentage of caloric intake (Gillman et al, 2000). Overall, children who eat dinner with their families at home have a better quality diet than those who do not.

Similarly Larson, Nuemark-Sztainer & Hannan (2007) conducted a cross-sectional study which found eating family meals is associated with better nutritional intake. A five-

year longitudinal study examined surveys and food frequency questionnaires which were completed by 946 female students and 764 male students in high school classrooms at Time 1 (1998-1999; mean age 15.9 years) and by mail at Time 2 (2003-2004; mean age 20.4 years). The cross-sectional analysis concluded that family meal frequency during adolescence predicted higher intakes of fruit ($P<0.05$), vegetables ($P<0.01$), dark-green and orange vegetables ($P=0.001$), lower soft drink beverage consumption ($P<0.05$) during young adulthood. Results of this study indicate a direct correlation between an increase in family meals and overall better diet quality later in young adulthood (Larson et al., 2007).

Fruit and Vegetable Consumption among Youth

Critical nutrition concerns about children's diet include excessive intakes of dietary fat, especially saturated fat, and inadequate amounts of foods rich in calcium and fiber. Inadequate amounts of essential nutrients such as calcium and fiber may be a direct result of a decreased fruit and vegetable consumption among children. Epidemiologic evidence indicates protective benefits of fruit and vegetable consumption against cardiovascular disease, diabetes, and various forms of cancer (Ford & Mokdad, 2001). The food choices of many children do not meet the recommended food group servings from the Food Guide Pyramid (CDC, 2007). Cook and Friday (2003) reported 63% of children ages 2 to 9 years are not consuming the recommended daily amount of fruit, in addition 78% are not consuming the recommended daily amount of vegetables. According to USDA (2007), children consume an average of 2.0 fruit servings a day and 2.2 servings of vegetables per day. Cullen et al., (2003) found that up to 35% of children's fruit and vegetable

consumption was related to the availability and accessibility of fruits and vegetables in the home.

It is estimated that children's current diets consist of minimal amount of fruits and vegetables, leading to a decreased intake of dietary fiber. Average dietary fiber intake among children ages 3 to 5 years and 6 to 11 years is 11.4 g/day and 13.1 g/day (USDA, 2007). The Youth Risk Behavior Survey (2005) reported 84% of Oklahoma high school students consume less than 5 servings of fruit and vegetables per day during the past 7 days. This data reflects a direct need for diet education that encourages the consumption of fruit and vegetables among children.

School Environment in Oklahoma

The school environment is perceived as a key atmosphere in which to implement dietary and physical activity changes in children's lifestyles. Nearly all children ages 5 years and older spend a large part of their day in school for 9 to 10 months out of the year (Institute of Medicine, 2005). There are many opportunities in the school setting to improve student's dietary intake and physical activity involvement. Policies and programs have the potential to influence the behaviors of all the students and their parents in a classroom setting, school, or school district (Institute of Medicine, 2005).

Among Oklahoma schools that require health education, 23% require students to take two or more health education courses and 65% of schools teach 15 critical nutrition and dietary topics required in health education courses (CDC, 2005). To address obesity, health education curricula should emphasize the importance of healthy eating and physical

activity. In 2005, CDC released the *Health Education Curriculum Analysis Tool* to help educators strengthen existing health education curricula, develop new curricula, or select commercial curricula that best meet the health education needs of students. Curricula are more likely to be effective in improving student health behaviors when educators teach skills needed to adopt healthy behaviors, provide opportunities to practice those learned skills, and focus on helping students overcome barriers to adopting healthy behaviors (Contento, Balch, Bronner, Lytle & Ket, 1995). Curricula that focus on factual information without incorporating student involvement are less likely to impact the health behaviors of students.

Many schools not only need to implement curricula that encourage children to apply dietary and physical activity changes, there is an increased need for schools to regulate food choices in vending machines and provide healthier snack choices. Food and beverages are offered to students through a variety of outlets outside of the regulated school meal program, such as vending machines, concession stands, a la carte and fundraisers (USDA, 2004). Currently, many schools have no restrictions on high-fat or high-sugar food options Among Oklahoma schools, only 19% offer fruit and vegetables to purchase from vending machines or the school store (CDC, 2005). In addition, only 15% of Oklahoma school's do not allow students to purchase candy, high fat snacks and soft drinks (CDC, 2005). However, states and individual school-districts can establish their own regulations (USDA, 2005).. This data suggest a strong need for intervention strategies to take place in Oklahoma schools. Schools provide an excellent opportunity to implement physical activity, health education and provide healthier meal options to decrease the prevalence of childhood overweight.

Children's Physical Activity Levels

Children in the U.S. are less physically active than they were a generation ago. The pace of life in most families may make it difficult for children to be physically active. Physical activity in children will promote a healthier weight, muscular strength, cardiovascular health, increased bone mass, and enhanced mental and emotional well being (CDC, 2005). According to the CDC (2005), it is recommended that children engage in at least 60 minutes of moderate intensity physical activity on most days of the week. The Youth Risk Factor Surveillance study (2005), states that less than 10% of youth in U.S. engage in any moderate or vigorous activity. Daily participation in school physical education among adolescents dropped 14 percent over the last 13 years from 42% in 1991 to 28% in 2003. In addition, it is reported that less than one-third (28%) of high school students meet the current recommended levels of physical activity (Lowrey et al., 2004). Looking at Oklahoma specifically, 62% of middle school and high school students did not meet the current recommended levels of physical activity. An additional 12% had not participated in any vigorous or moderate activity during the previous 7 days and 69% did not attend physical education classes daily (CDC, 2004). There is a widespread belief that inactive children are much more likely to become inactive adults. With these statistics, there is an increased need for effective physical activity programs that provide opportunities and supportive environments in schools, homes, and in the community.

Benefits of Family Exercise

Families can implement and adopt exercise routines that can increase children's daily physical activity levels. Parents often are the gatekeepers of children's physical activity through transportation to recreational activities, limiting children's sedentary behaviors and engaging in family physical activities (Rodearmel et al., 2007). Cullen et al., (2003) reported that parents can influence their child's health behaviors in ways such as direct modeling, rewarding desirable behaviors, establishing or eliminating barriers, providing resources to perform the behavior and employing authoritative parenting procedures to help the child develop self control skills.

It has been suggested that parents who encourage physical activity for their children, may be directly linked to increasing children's physical activity level (Gattshall, Shoup, Marshall, Crane & Estabrooks, 2008). Gattshall et al., (2008) has determined that the stronger the parental policy was toward encouraging exercise the more active the child was. Moore et al., (1991) used data from the Framingham Children's Study, found that children ages 3-7 who have active mothers are 2.0 times more likely to be physically active, 3.5 time as likely to be active if their fathers are active and 5.8 times as likely to be active if both parents are physically active. Gattshall et al., (2008) noted that parental praising of a child participating in physical activity programs at a local organization can go a long way in continuing that sport. Trost et al., (2003) conducted a study to examine the link between parental physical activity, support for physical activity, and children's perceptions with participation in physical activity. The sample consisted of 380 students in grades 7 through 12 (mean age 14.0$\pm$ 1.6 years) and their parents, which were recruited

from junior and senior high schools located in Amherst MA. Outcomes were measured through a questionnaire completed by parents who assessed their physical activity habits, enjoyment, supportive behaviors for their child's physical activity and beliefs regarding the importance of physical activity. Students completed a 46-item survey which assessed their level of physical activity during the past 7 days and a 5-item physical activity self-efficacy scale. Overall, parents reported their level of support for encouraging, transporting, or participating in physical activity with their child was less then twice per week. Standardized coefficients for the parental influence variables ranged from 0.17 to 0.24, and were all significant (p<0.0001). There is a strong correlation between parental encouragement and influence in children's physical activity involvement. If more parents would implement family physical activity routines, more children would be less sedentary and adopt active lifestyles (Trost et al., 2003)

The NASPE, 2003 conducted a study which indicated 83% of parents participated in physical activities with their child, whereas 80% plan family physical activities to increase the physical fitness of their children. Rodearmel et al., (2007) evaluated whether smaller changes in diet and physical activity could prevent excessive weight gain in overweight children. This family-intervention study was promoted by the America on the Move (AOM) initiative. America on the Move (AOM) is a nonprofit initiative to encourage Americans to make small lifestyle changes to prevent excessive weight gain. Rodearmel et al., (2007) evaluated small changes as an approach for weight gain prevention in families with at least one child ages 7-14 years old during a six month time period. Families were randomly assigned to either the experimental group (n=100) or the self-monitor (SM) control group (n=92). Families assigned to experimental group were asked to make two

small lifestyle changes: (1) walk an additional 2000 steps per day above baseline as measured by pedometers and (2) to eliminate 100 kcal/day from their typical diet by replacing dietary sugar with a non-caloric sweetener, sucralose (splenda). Families assigned to the self-monitor (SM) or the control group were asked to use pedometers to record physical activity with no change to diet or physical activity level. Rodearmel et al., (2007) found during the six month time period, both groups of children showed significant decreases in BMI for age. Results from the experimental group when compared with the SM control group, showed a significantly higher percentage of children who maintained or reduced their BMI for age. During the six month time period, there was no significant weight gain in parents of either group. The goal of this study was to not to promote weight loss among children, but to decrease the rate in weight gain. The small-changes approach to lifestyle modification could be easily implemented and reduce excessive weight gain among family members over time.

Media Influences in Overweight Children

The prevalence of sedentary behaviors among children has increased dramatically over the years. Several studies have found a positive association between the time spent viewing television and increased prevalence of overweight in children (Dietz & Robinson, 2005). Television (TV) viewing is one of the most common sedentary behaviors among children. The American Academy of Pediatrics (2001) recommends that television and video time be limited to a maximum of 2 hours per day. Despite these recommendations, it is estimated that the average child spends nearly 20 hours watching television weekly

(Anderson et al, 1998). Children spend a considerable amount of time with media. One study found that time spent watching TV, videos, DVDs, and movies averaged slightly over 3 hours per day among children ages 8–18 years. It is estimated that approximately 80% of 8 to 16 year old children report watching more than 3 hours of TV daily (Anderson et al., 1998). Limiting screen time can be one of the biggest impacts parents can make to increase the physical activity level of their children.

Media use may contribute to childhood overweight by displacing physical activity and contributing to sedentary behaviors. Epidemiologic studies have shown a direct relationship between increased risk factors for the development of overweight children and television viewing. Current guidelines suggest 60 minutes of moderate to vigorous activity daily, which can be accomplished by replacing 4 hours of sedentary behaviors each week (Epstein et al., 2000). Sedentary behaviors remain an important target in the prevention and treatment of overweight children. Parents play an important role to implement active lifestyles into their children's daily lives. Epstein et al., (2000) conducted a randomized control trial to examine the influences of decreased sedentary behaviors versus increased physical activity. Participants included 90 overweight children ages 8-12 years old and their parents. Families were randomly assigned to 1 of 4 groups with varied targeted behaviors. Randomly assigned groups included: 1. Sedentary behaviors vs. physical activity or 2. Treatment dose (high vs. low), which included 10 or 20 hours per week of sedentary behaviors. Out of the 90 families, 64% of participating parents were obese and 51% were overweight. Participating children were at least 20% overweight. All 90 families participated in the six month treatment. Which included 16 meetings on a weekly basis, and a 12 and 24 month follow up. During the treatment period, families received parent and

child workbooks that included education material involving weight control, diet, activity programs and behavior change techniques. Results from the 2 year randomized control trial which targeted decreasing sedentary behaviors or increasing physical activities among families, shows significant decreases in percent overweight and improved overall physical fitness. During the two years, the average child grew 11.4 cm and gained 9.0 kg, which was associated with a 12.9% decrease in overweight status. Parents who completed the trial lost 12.0 kg at 6 months, 9.9 kg at 12 months and 7.0 kg at 2 years. This can account for a 7.8% weight loss from initial weight. Self-reported physical activity minutes increased and sedentary time decreased among families during the treatment period. These results provide experimental evidence that reducing access to sedentary behaviors such as television viewing is an alternative to targeting physical activity among overweight children. The present study demonstrated that reducing sedentary behaviors as part of comprehensive family-based weight control program is associated with a decrease in weight and increased fitness among all family members (Epstein et al., 2000).

Television viewing by children is directly correlated with consumption of less nutrient rich foods, consumption of foods advertised on television, and children's attempt to influence their parent's food purchases (Wang & Dietz, 1999; Salens et al., 2002). Television viewing is thought to promote weight gain by displacing physical activity, increasing energy intake during television viewing, or as a result of food advertising (Salens et al., 2002; ADA, 2004). Television advertising includes intense marketing aimed at shaping nutritional beliefs, attitudes, and consumption patterns of youth (Kotz & Story, 1994). Kotz and Story (1994) found that 57% of all advertisements were for food, and 44% of those were foods classified in the fats, oils and sweet food group. The current

challenge to decrease the prevalence of overweight children is so significant, that it is important to evaluate every sector of societal influences in order to help address the obesity epidemic.

Impact of Television on Children's Fruit and Vegetable Consumption

Television viewing is hypothesized to be inversely associated with fruit and vegetable consumption among children. Television viewing seems to be related to children's poor diet because of highly advertised foods that may lead to replacement of fruits and vegetables (Boyton-Jarett et al., 2003). According to the USDA (2008), current dietary guidelines recommend five servings of fruit and vegetables daily. Krebs-Smith et al., (1996) reported only 20% of children consume five or more servings of fruit and vegetables daily. However, more than 25% of the reported vegetables consumed by children were french fries (Krebs-Smith et. al., 1996). A strong correlation has been identified between television viewing and the consumption of less nutrient-rich foods.

Jarett et al., (2003) conducted a randomized control trial over a 19 month period in ten schools from four communities in Boston, Massachusetts. Schools were matched by town or school size and randomly assigned to either intervention (n=*5*) or control (n=5). Participants included 548 ethnically diverse middle school students (average age 11.7 $\pm$ 0.8 years). Researchers examined the number of hours of television watched versus fruit and vegetable intake. Exposure to television was assessed by using an 11-item television and video measure. Students self-reported their dietary intake, physical activity and television viewing by completing a food and activity questionnaire. Results showed that for every

additional hour of television watched, there was a decrease in fruit and vegetable intake. Students who reported an increase in baseline television viewing, on average consumed 2.25 fewer servings of fruit and vegetables per week versus those students who did not increase baseline television viewing (Boynton-Jarett et al., 2003). Therefore, it can be concluded that there is a direct relationship between television viewing and a decline in children's fruit and vegetable intake.

Home Environmental Factors on Children's Television Viewing

Parent-child interactions and the home environment can influence the sedentary behaviors of children. Parents often demonstrate as role models within the home and can influence their children to develop similar habits. Factors in the home play a decisive role in depicting hours of television children watch. It is a common for many households to be defined as "constant television households" and have the television on at all times even during meals. The frequency of television viewing has become a daily routine for many families and can replace physical activities. There is significant relationship between childhood overweight and sedentary behaviors including television viewing. However, many parents are still unaware of the benefits to limiting screen time to 2 hours a day (Salens et al., 2002).

Salens et al., (2002) explored home environmental factors in relation to access to the television and the relationship to children's overall television viewing time. Participants included 169 mothers and their children from 63 San Diego county state funded pre-schools, children's centers, or Head Start programs as part of the San Diego Study of Child Activity (SCAN). Children's television time and home environment were longitudinally assessed among 169 families with children followed from time 1 (T1) children ages 6 years to time 2 (T2) children ages 12 years. Participating mothers provided a complete television and television related home environment data at the fourth (T1) and eighth (T2) measurement of wave of SCAN. Participants included 305 children (T1) and 228 children (T2). At the measurement of time 1 (T1), children were an average age of 6 years old, with a BMI of 16.1, an average of 3.3 meals eaten with television per week and 26% had a

television in their bedroom. Follow up measurements among children at time 2 (T2), included an average age of 12.1 years old, average BMI of 21.6, an average of 5.3 meals eaten with television per week, and 51% had a television in bedroom. Weekly television viewing increased for boys at 22 hrs (T1) to 29 hrs (T2) week. Television viewing among girls increased from 16 hrs (T1) to 24 hrs (T2) weekly. This data indicated a positive relationship between children's access to television and increasing television viewing through childhood. The average BMI of 21.6 measured at (T2) specified children were at the 85th percentile, which indicated these children to be at risk for overweight (Salens et al., 2002).

Many sedentary factors are predisposing children to risk factors associated with overweight status. In order to promote a more active lifestyle among children, parents need to become aware of the recommended time constraints involving television viewing (Saelens et al., 2002). The primary aim of intervention is to educate parents on how to incorporate an active lifestyle for their children and use the community resources available to them. The American Academy of Pediatrics (2001) recommends that parents should be good media role models for their children, emphasize alternative activities, avoid using the television as an "electronic babysitter," teach critical viewing skills to their children, and the most important of all limit and focus time spent viewing television to less than one to two hours per day.

Community Environmental Factors to Children's Physical Activity Level

The built environment within communities influences access to physical activity opportunities. For example, a lack of sidewalks, safe bike paths, and parks in neighborhoods can discourage children from participating in physical activity (IOM, 2005). Several studies have shown that access to a neighborhood park or playground is associated with higher levels of physical activity. However, compared with previous generations, children are spending less time playing outdoors. For today's generation recognizing options for physical activity may be more challenging for children and their families. Inside the home has become a frequent place for children's daily play; whereas outdoor physical activity tends to be organized and supervised by parents (Karsten, 2005). Outdoor physical activities within the neighborhood have always been identified as a key setting to promote less structured physical activity for children (Humbert, Chad & Spink , 2006). Neighborhoods can provide inexpensive, easily assessable physical activities for children such as walking, cycling and running. Lastly, children participating in physical activity in the neighborhood provide an opportunity for play outside without relying on parents to provide transport (Humbert et al., 2006). Many parents may be aware of the benefits of physical activity opportunities within the neighborhood, however there are many safety concerns reported by parents.

Recent research has identified lack of neighborhood safety as a potential barrier to physical activity levels in children (Karsten 2005; Farley 2007). Parents often limit their children's outdoor physical activity because of their fears of neighborhood safety. Lumeng and her colleagues (2006) discovered that parents who perceived their neighborhood as

unsafe had children who were four times more likes to be overweight in the first grade. Lumeng et al., (2006) conducted a cross-sectional analysis in order to determine if there is a relationship between parental perception of neighborhood safety and overweight children. The study was initiated by a group of doctors who encountered many parents who reported limiting their children's outdoor play due to safety concerns. Participants included 768 children ages 7 years, which 10% were classified as overweight (BMI > 95th %) living in the Boston area. Parents reported demographics and perception of neighborhood safety by a standardized questionnaire. Researchers found that the perception of a neighborhoods safety was enough to limit the amount of time parents sent their children outside to play. Results indicated that neighborhood safety ratings in the lowest quartile showed a positive correlation with a higher risk of overweight children ages 7 years compared with the neighborhoods perceived to be safer. Researchers concluded that public health efforts may benefit from policies directed toward improving both actual and perceived neighborhood safety (Lumeng et al, 2006).

Studies examining parent's fear for their children's safety included concerns of road safety and "stranger danger" (Mullan, 2003). Gielen et al., (2004) conducted a study in Maryland and found that 70% of parents of junior high children restricted their outdoor play because of "unsafe cars and trucks". Parental perceptions of neighborhood safety can play a role in whether or not a child is allowed to play outside. For example, parental perceptions of neighborhood safety may be shaped by signs of physical neighborhood breakdown, rather than crime statistics. These perceptions may influence whether or not parents take a child to a playground (Farley et al., 2007). Evidence suggests a positive relationship between perceived neighborhood safety and levels of physical activity among

children. This leads to a subsequent need to provide interventions which educate parents about safe environments. Parental awareness of neighborhood activities that provide a safe environment can increase children's involvement in outside physical activity.

Focus Group Research

According to Kruger (1994) focus groups are carefully planned discussions designed to gather perceptions on a defined area of interest. Kruger recommends focus groups be guided by a skilled interviewer in order to allow participants to effectively share their ideas and perceptions during the discussion. Carey (1994) recommends using a semi-structured group session which is moderated by a group leader, held in an informal setting with the purpose of collection information on a designed topic. Focus groups generate qualitative data which is useful for understanding additional ideas, issues, and concerns (Kruger, 1994). It is suggested that effective focus groups range from 6 to 12 participants. However, according to Stewart and Shamdasani (1990), this size is too large and limiting the group to four to six allows each participant to fully report their perceptions and beliefs Furthermore, discussion guides typically have four components: (1) an opening and warm-up, (2) a set of discussion questions, (3) a close and (4) a summery of reported information (CDC, 2005). The purpose of focus group results can be used for program planning including material development based on data reported to gain a better understanding of perceptions, motivations, beliefs, lifestyles, and ideas for intervention (National Cancer Institute, 2002).

CHAPTER III

METHODS

This research project explored perceptions, opinions, beliefs, and attitudes of parents regarding healthy eating practices and physical activity routines of their children. The purpose of this research project was to identify parental perceptions in order to determine barriers to a healthier lifestyle. This research project was part of the Targeted Initiative Program (TIP) Grant which is a joint effort of Oklahoma Cooperative Extension service and the Oklahoma Agriculture Experiment station. Recruited subjects included parents with at least one school-aged child. The methods were meant to generate parental perceptions discussing feeding practices, physical activity patterns and barriers to intervention and are not meant to test specific hypothesis.

Objectives of the study include:

1. To explore the perceptions, opinions, beliefs, and attitudes of parents regarding healthy eating practices and physical activity of their children.
2. To identify the barriers involved to a more active and healthier lifestyle among families.
3. To determine the eating behaviors and physical activity routines of families.

Subjects

The population consisted of a convenience sample of 31 parents who have school age children (5-18 years old) in Southeast Oklahoma. Hosted sites included Tulsa, Tishomingo, Stillwell and Atoka. Participants in the Tulsa focus group included four women, with two single moms, and one adult male. Their children ranged from middle school to teenage years. The focus group in Tulsa lasted seventy one minutes. Participants in Tishomingo included six women and one male all of whom were Native American and took care of school aged children. Participants in Stilwell include three moms with children of varying ages. The focus group in Stillwell lasted forty-eight minutes. Participants in Atoka included six working moms with children of varying ages. The Atoka focus group lasted seventy-two minutes.

A convenience sample was developed when Oklahoma State University conducted a pilot study at a Healthy Oklahoma Impact Program team in-service. The purpose of the Healthy Oklahoma Impact Program is to impact youth and make improvements in food, nutrition, and physical activity. At the IMPACT team in-service, many educators expressed interest in participating in recruitment of the subjects for the focus groups. State Educators recruited a convenience sample of parents of school aged children in their county. Parents were asked to participate in a group discussion about perceptions of healthy eating and physical activity.

Research Design

This study used grounded theory qualitative research to obtain the desired data. Qualitative research is used to provide insights about the perceptions, opinions, beliefs and attitudes of a target population (Morgan, 1997). Parents participated in a topic guided group discussion about eating practices and physical activity routines among their family. Focus groups were used to generalize and identify common themes and patterns. This study was approved by the Institutional Review Board at Oklahoma State University (Appendix A).

Data Collection

Focus Group Protocol

In order to effectively develop a focus group protocol, an in-depth review of literature was conducted. Upon completion of review of the literature, a focus group script was developed. The original protocol was prepared for the Division of Nutrition and Physical Activity used by the Center for Chronic Disease (CDC, 2002).

Pre-Testing of Procedures

One pilot group was held to gather feedback from the Cooperative Extension Educators that are part of the Healthy Oklahoma Impact team. The pilot test was held at a Healthy Oklahoma Impact program in-service in April 2007. Cooperative Extension Educators were able to provide documented changes or feedback to the focus group script.

All feedback was recorded and applied to the protocol as deemed necessary. The majority of the feedback was directed to the length of the script, as some educators felt a number of the questions were repetitive. After documented responses were recorded, questions about eating patterns and physical activity were changed and modified to improve the effectiveness of the focus group script. Focus group questions remained consistent and did not change from the pilot to the final sample.

Focus Groups

Following the pilot test, four focus groups sessions were conducted. Participants were asked a series of questions modified from the Division of Nutrition and Physical Activity protocol used by the Center for Chronic Disease (CDC, 2002) (Appendix B). One trained moderator involved in the instructional process asked the questions (Appendix C). Each focus group session was held at an convenient location and each lasted approximately one to two hours. Each focus group consisted of 4-6 participants, which allowed the session to be relaxed, manageable and provide an in-depth discussion. The focus group questions were neutrally worded to reduce possible bias in responses (e.g. "How do you feel about types of foods your children currently eat?). The focus group questions were divided into two sections; (1) food and meal, and (2) physical activity. In addition, related responses were invited to encourage participants to share ideas, perceptions and barriers to these general categories. After each session, the moderator reviewed the content with participants

to ensure validity. This gave additional time for participants to provide any additional feedback that was not covered during the focus group session.

Data Analysis

Each focus group was audio recorded and transcribed verbatim, omitting names of participants and assigning each speaker with a letter (R) for respondent. All transcripts were prepared by the Social Bureau of Research at Oklahoma State University and printed transcripts were provided. After focus groups were transcribed, participant responses were categorized into emerging themes and patterns. Transcripts were analyzed by researchers using content analysis (Krueger, 1994). Each of the researchers identified major themes, patterns and frequencies which were reported to determine parental perceptions regarding healthy eating habits and physical activity routines. Individual worksheets were incorporated into the analysis process. This method relied on comparing and contrasting the data to assess final themes. Each quote from transcripts was read to see if it fit into one of the existing categories or needed consideration for a new category. Toward the end of the analysis, the categories were reviewed to see how they fit together. Based on the analysis of the two principal researchers, they came to an agreement of final themes included in this report. The process of review was repeated until no new information could be obtained. This information will allow educators to identify parental perceptions regarding eating practices and physical activity routines. In doing so, educators will be able to provide effective intervention strategies to implement healthy eating and physical activities patterns

among parents and school-aged children. Summary of the themes were compiled for a final review.

CHAPTER IV

RESULTS AND DISCUSSION

This study sought to determine parental perceptions about eating patterns and exercise routines of their children. The research study sought to determine the barriers parents face in providing healthier food choices and encouraging daily physical activity for their children. For the purpose of the study, parents with school aged children in Oklahoma were selected to participate in the study.

Table 1. Focus group questions for the determination of parental perceptions regarding healthy eating of their children.

I. **Ice Breaker**

1. . Tell us your first name and a little bit about your children

II. **Opener**

2. Do you believe that it is more important to make sure your child eats ***something*** than it is to worry about ***what*** your child eats? (probe for why)
    a. How do you respond if your child won't eat a food item? (probe for why)
3. What are the best things about mealtimes with your children?
4. What are things you don't like to happen at mealtimes?

III. Food and meals

1. In your family, who decides what will be served at mealtime?
    a. Is this most often the case? Under what circumstances would it not be the case?
2. In your family, who decides when you and your children will eat fast food?
    a. Is this most often the case? Under what circumstances would this not be the case?
3. How do you feel about types of foods your children currently eat?
    a. Do you feel your children's meals include all of the foods they need to stay healthy? (provide complete nutrition?)
4. Are there foods you would ***add*** to their meals and snacks to make them healthier? (probe for why)

Table 1. Focus group questions for the determination of parental perceptions

5. Are there foods you would ***remove*** from their meals and snacks to make them healthier? Which foods (probe for why)?
6. Is it difficult to provide your children healthier food choices (probe why it is or isn't difficult)?
7. Are any other things you would like to say (in general) about what should be done to make children's food and meals healthier.

Table 2. Focus group questions for the determination of parental perceptions regarding physical activity behaviors of their children.

IV. Physical Activity

1. What is your family's favorite physical activity to participate in?
2. In your family, who decides what, when and how long your child does physical activity?
    - Is this mostly the case?
    - Under what circumstances would this not be the case?
3. When you are home, about how much time does your child spend watching TV, on the computer, or playing video games?
    a. What about when you aren't at home? Do you think your child spends more time on the computer, watching TV or playing video games?
3. Does your child eat meals while watching TV or playing electronic during meals? Snacks?
4. Would you be able to limit your child's TV viewing to 2 hours per day? (if not, why? If yes, how?)
5. I want you to think about children in general, how much time per day should a child spend in activities where he or she is moving around (spend in physical activities)?
6. Does your child get that much physical activity? If not, what kinds of things prevent your child from being active?

Table 2. Focus group questions for the determination of parental perceptions regarding physical activity behaviors of their children.

7. Why is physical activity important for children?

    b. What do you think are some of the health benefits for children that come from physical activity?

8. What do you think you would need to get a physical activity routine started for your children? (or what would you need to increase your child's physical activity level?)

V. Close

I'm sure most of you are aware that obesity is a real problem for many of our children, maybe not for your kids, but nationwide kids weigh too much and it seems as though they aren't getting enough physical activity and they aren't eating the foods that are healthy for them. The point of this study is to try to get at why -To get at some of the family reasons and other reasons why kids are this way.

Focus Group Findings

A total of four focus groups were conducted in Southeast Oklahoma. Results from this study are reported based on common themes identified which were agreed upon by the researchers.

Eating something versus eating healthy

The majority of parents reported that it was more important that their child ate something versus worrying about what food choices their child ate. Parent's agreed that

they are more concerned to know that their child had at least eaten something. Overall, parents stated they would feel guilty if they restricted unhealthy food choices and could not let their child remain hungry. Parental comments about their child eating something versus worrying about their food choices included:

- "*I just couldn't stand the thought of her going to school with nothing in her tummy."*
- *"Sometimes you don't have a choice than to grab something."*
- *"If you're headed to a ball game or if you're running late, I'd rather them eat something real fast, then not eat at all."*
- *"Oh, you got something unhealthy, well you ain't eating that, you're going to just have to starve (laughing)."*
- "*I know what they should eat, and I know that they should eat, and if they won't eat that, then I make sure that they eat something."*
- *"I was just literally begging her to eat, she just was not hungry, and so at that point, I would have just given her anything."*

Children refusing a food item

A majority of parents reported that they do not force food items on their children, especially vegetables. Parents stated that they ask their child to at least try the new food item. Comments included:

- "*If they have never tried it, I ask they take at least one bite."*
- *"You don't have to like it, or eat all of it, but you have to try it."*

- "*If you get hungry enough, they will eat it eventually."*
- *"If I don't like it, I don't expect them to like it."*
- *"Eat what your given, or eat more of something that you like."*

Although, majority of parents reported asking their child to at least try a new food item, some parents still cater to their child's food preferences by adding comments like:

- *"I make them something else to eat."*
- *"I try and make things I know they will like."*
- *If they don't like it, they don't have to eat it."*

It is well known that childhood is a time to acquire food preferences which are often carried into adulthood (Lindsay et al., 2006). Parental influence is thought to be the strongest in early childhood when parents act as providers, enforcers and role models (McCaffree, 2003). If parents demonstrated adult food modeling with fruits and vegetables, children would be influenced to adopt healthier diets. Parents with good dietary awareness and nutrition knowledge are more likely to make healthier food choices for their children (Clark et al., 2007).

Parents are often bombarded with nutritional information to encourage and provide a well balanced diet for their children. However, many parents may be unaware that children do not immediately or willingly accept new foods that are not high in sugar content (Sullivan & Birch, 1994). This may be especially true when offering children new fruits and vegetables. It is important for parents to realize that children's food preferences are learned through repeated exposure to foods. It has been identified that a

minimum of 8 to 10 exposures of tasting a food before children develop an increased preference for unfamiliar food items (Sullivan & Birch, 1994). Parental response to their children's food rejection may pose many consequences for their children's early food acceptance. As a result, parents often serve preferred foods, versus continued exposure to the foods their child has rejected on a couple of occasions (Stratton & Bromley, 1999).

Best and worst things about mealtimes

Many parents reported dinner being the best meal of the day because dinner was the only meal shared together by all family members. Dinner was described as a time to relax, discuss daily events, communicate and build memories. Comments reported included:

- "*I miss the more traditional style of meals where you sit down at the table, and you are conversing with each other with out having interruptions of the telephone of the t.v."*
- *"I like the time, quality of time."*
- *"Enjoy sharing about our day."*
- *"A time for conversation and communication*."

The family meal provides a quality diet with key nutrients, family communication, improved school and psychological performance (Anderson et al., 1998). Family meals likely represent an important opportunity for exposure to healthful food choices and parental modeling of eating behaviors (Lien, Lytle & Klepp, 2001). Despite the

importance of family meal time, the proportion of families dining together is at a constant decline. Gillman et al., (2000) concluded that family meals are associated with higher intakes of several nutrients such as fiber, calcium, and folate with a decrease in saturated fats and percentage of caloric intake. Although many parents reported enjoying family meal time, the 2003 National Survey of Children's Health reported only 50.5% of Oklahoma families ate dinner together every day during the past week prior to the conducted survey. Overall, children who eat dinner with their families have a better quality diet than those who do not (Gillman et al., 2000).

Although, parents reported many positive enjoyments from family mealtime, majority of parents reported disruptions and arguments being the worst things about family mealtime.

- *"No television during dinner."*
- *"Phone calls."*
- *"Fighting at the table."*
- *"I think eating should be totally focused on the family."*

Who decides what will be served at mealtimes?

The participants that attended the focus group reported they primarily made the mealtime decisions, especially for the younger children. However, some participants included their children in the decision-making because they wanted to cook something

their children would eat. For parents with teenage children, they reported mealtime decisions often happened as a group decision. Comments included:

- *"It's a family thing"*
- *"My kids decide what they want and that's what I fix."*
- *"Mothers"*
- *"If I know I'm fixing greens, I ask mine what vegetables do you want."*
- *"It's a vote in our house.*

Who decides when to eat fast food?

Fast food was often reported as part of family mealtime. Parents often reported time as a major influential factor when deciding to dine out. Other influential factors reported by parents included situations such as not planning for dinner or attending a sporting event in the evening which often resulted in fast food for dinner. Comments included:

- *"When it comes to a ball game that night, we've got to do something."*
- *"My schedule dictates when we eat out."*
- *"The kids lobby for something like that, we want fried chicken tonight. If I'm tired I don't feel like arguing with them."*
- "*Both decide, when there's no time"*
- *"Oh that's me too."*

Fewer families are able to eat meals together, leading to increased fast food consumption. Families with fast-paced lifestyles often turn to fast food as a solution. Many families choose fast food for the convenience, cost and larger portion sizes. Lin et al (1999) reports that fast food accounted for more than half of the meals away from home, which also contributed to an average of 10% of children's total energy intake. Fast food compromises diet quality in ways that might affect body weight by displacing more healthful food options. Children consuming fast food had higher intakes of fat, saturated fat, cholesterol, sodium, and lower intakes of fruit and vegetable consumption (Nielsen et al., 2002). Another contributing factor to the relevant trend of fast food consumption is advertising. Youth are influenced through repetitious advertising commercials on television. The industry markets heavily to children with the goal of developing a fast-food habit that will persist into adulthood (McNeal, 1998). Television advertising includes intense marketing aimed at shaping nutritional beliefs, attitudes and consumption patterns of youth, and little of this marketing is aimed at fruits and vegetables. In a hectic society, busy family routines foster a need for quick and convenient meals and many prevent preparation of healthful meals at home (Nielsen et al., 2002).

Do parents feel their children are eating healthy meals?

A majority of the parents reported concern about the current contents of their children's diets. Repeatedly, time is cited as the primary factor to what will be served at mealtimes for children of this generation. A majority of the parents reported that their

children do not consume enough fruit and vegetables. Many reported an increased consumption in high caloric junk foods among their children. Comments included:

- *"I can honestly say they don't eat very healthy, because I was raised on fried foods and it's faster to do it that way."*
- "*I know mine don't get enough vegetables."*
- *"I don't like the way they crave sugar."*
- "*I think she has an obsession with food. Food is a comfort to her and she is going for the junk food. She'll eat them before she eats anything healthy because they're quick, convenient and cheap."*
- *"They don't get recommended servings of fruit and vegetables, especially when we're eating fast food."*

Critical nutrition concerns about children's diets include excessive amounts of dietary fiber, saturated fat, and inadequate amounts of foods rich in calcium and fiber. Cook and Friday (2003) reported children ages 2 to 9 are not consuming the recommended daily amount of fruit, in addition 78% are not consuming the recommended vegetables. According to the USDA (2007) children consume 2.0 serving of fruit and 2.2 servings of vegetables daily. Furthermore, the Youth Risk Behavior Survey (2005) reported Oklahoma high school students consume less than 5 servings of fruit and vegetables per day during the past 7 days. Cullen et al., (2003) found that up to 35% of children's fruit and vegetable consumption was related to the availability and accessibility of fruits and vegetables in the home. More importantly, it has previously been demonstrated that

eating behaviors such fruit, vegetable, and soft drink consumption during adolescence are important predictors of these same behaviors in early adulthood (Lien et al., 2001).

Foods parents would add/remove from children's diet

Parents were able to identify food choices they would add or remove to make their children's diet healthier. Based on parental responses, it is evident parents are aware of what healthy food additions need to be included into their family's current diet. A majority of parents reported a desire to add more fruits and vegetables to provide healthier meals or snacks for their children. Comments included:

- "*Not eating enough fruits and vegetables."*
- *"I feel like my kids don't get enough dairy, they don't eat cheese, they don't like yogurt and at one point I even started buying ice cream to give them some dairy."*
- *"I will buy fruit, and it will spoil… my kids won't touch fruit."*
- *"Add whole wheat."*
- *"More vegetables."*
- *"Fiber, high fiber breads and cereals."*

Parents were able to identify many food choices they felt were unhealthy in their children's diets and would remove. Although parents realized these items were not the best for their children, they still bought them and brought them home. Comments included:

- *"Drinking pop."*
- *"Fried foods, that's all we eat."*

- *"Sweets, chips, salty snacks, candy, pop."*

Many factors coincide with the food options parents provide to their children. Despite parental general knowledge about healthy/unhealthy foods, this knowledge did not generally translate into reports of consistently healthy behaviors. A longstanding finding in this study of food attitudes and eating behavior is that knowledge about nutrition does not often translate into more healthy eating behavior (Brown et al., 2000). Parental readiness and motivation for change should first be evaluated to determine parent's level of motivation to provide a healthier diet for their family's (Trioiao & Flegal, 1998). Our focus group discussion indicated that a simple-based nutrition education strategy may not be the central motivation for food choice. Nutrition knowledge must be translated into actual behaviors. It is crucial that parents clearly understand the importance of a healthy lifestyle. The education setting is just one strategy to develop practical strategies to prevent obesity in children.

Why is it difficult to provide healthier food choices?

Parents reported a desire to incorporate and provide healthier meals. Reported barriers to healthier meals included the cost of healthier foods, preparation involved, parental motivation and not wanting to prepare foods that would be disliked and result in wasting the fruit or vegetable they served. Parents have identified the following barriers:

- "*It's too time consuming to cook."*
- *"Most of the time I'm rushing them out the door without breakfast."*

- "*Have to modify our own behaviors before we can modify our children's eating habits."*
- *"I'm looking for something that's fast and quick."*
- *"I think healthy foods are a lot more expensive."*
- *"Pasta and junk foods are cheaper."*
- *"Fresh fruits and vegetables are more expensive."*
- *"Peers- if friends don't eat salad, then they're not going to eat it."*
- *"My problem is I'm not a vegetable eater, so I do green beans and corn and that's about the max."*

What would be helpful

Parents were able to offer many suggested solutions to the barriers involved in offering healthier meals for their children. A majority of parents agreed prime barriers related to buying healthier foods included time, cost, wastefulness and their own motivational level. All of these factors contributed an influential impact when parents discussed offering healthier meals. Several comments included ideas for intervention such as:

- *"I would like to know of other ways to prepare foods than frying. Just try to figure out a way that they'll eat it and taste good, even so I will eat it."*
- *"How to prepare vegetables that are tasteful and different."*
- *"You cannot find anything that does not have lots of sugar, it's just not out there, everything has sugar."*

- *"Other ways to prepare grilled foods."*
- *"School lunch is terrible."*
- *"I just wish it was more affordable for us to make sure that our kids have healthier alternatives."*

Parents often reported the need for quick, cheap and tasty meal ideas. Parents can influence their children's dietary practices in at least five areas: 1.) Availability and accessibility of foods, 2.) Adult food modeling, 3.) Meal structure, 4.) Food socialization practices and 5.) Food-related parenting style (Nicklas et al., 2001). These factors play a decisive role in depicting food choices parents offer to their children. Glanz and colleagues (1998) determined factors influencing food choices include nutrition knowledge, sensory preferences, cost and availability of foods. Sensory characteristics including taste, quality and the cost of food seems to be the most influential factor on food choice. These factors may become barriers to adopting healthier diets because consumers believe that a healthful diet is more expensive and has poorer taste than their usual diet (Glanz et al., 1998). A major suggestion discussed most frequently in the present study was how to make healthful foods taste better, different food preparation methods. Health education interventions which change family attitudes and habits are likely to promote longer lasting health behavior changes. Parents prefer more flexible educational methods, such as printed materials or activities that can be completed at home with their children. Thus a nontraditional, non-class format appears most efficacious for a family intervention program.

Physical Activity

For educators to effectively educate families and decrease sedentary behaviors, family physical activity routines are an important factor to identify. Parental perceptions regarding physical activity can lead to a better understanding of what parents are willing to do to increase the physical activity level of their children. Parents identified barriers such as safety, motivation and limited community opportunities as contributing factors to limited activity.

What is your family's favorite physical activity to participate in together?

- *"Bike riding"*
- *"We walk together."*
- *"Organized sports."*
- *"Watching television."*
- *"Going swimming."*

In the family, who decides how long to participate in physical activity?

Parents may be unaware how much physical activity their child should participate in daily. According to the American Academy of Pediatrics (2008), children should participate in at least 60 minutes of moderate to vigorous activity.

Comments reported by parents regarding time spent in physical activity included the following:

- *"The kids themselves are the ones who decide and it is fine with the parents because they're getting plenty of exercise."*
- *"I like my kids being really active in all the sports, but there are some sports that they just don't like, so I don't make them do it if they don't like it."*
- *"He will just sit and watch t.v., he's not getting into trouble, and they are just sitting there, so therefore we don't encourage a lot of activity."*
- *"As long as I am outside, my kids will keep going and going."*

Parental support for physical activity has been identified as a key correlate of children's physical activity behavior. Parents are often the gatekeepers of children's physical activity through transportation, placing limitations on children's sedentary behaviors and engaging in family physical activities (Rodearmel et al., 2007). Many studies have reported a positive correlation between the physical activity levels of parents and their children (Humbert et al., 2006; NASPE 2006; Moore et. al. 1991). Moore et al., (1991) used data from the Framingham Children's Study and found that children ages 3-7 that have active mothers are 2.0 times more likely to be physically active, 3.5 times as likely to be active if their fathers are active and 5.8 times as likely to be active if both parents are physically active. Also, it is reported that parental support in the form of providing transportation to sports or other physical activities was correlated with increased physical activity in children ages 9-14 (Sallis, Alcaraz, McKenzie & Hovell,

1999). In addition, parental verbal encouragement and promoting children to be physically active was found to be significantly associated with higher physical activity of a child participating in physical activity programs (Gattshall et. al., 2008; Hoefer, McKenzie, Sallis, Marshall & Conway, 2001). The findings of the present study indicated parental involvement and encouragement along with children's self-motivation is the deciding factor in how much physical activity children participate in.

How much time spent with electronics (t.v., computer, video games)?

- *"My daughter will sit on the computer all day long if I let her."*
- *"We eat dinner, then TV rules until bedtime, almost like 4-5 hours every night."*
- *"It's an electronic world and for kids today their world revolves around electronics."*
- *"I have to hide the power cord in my house."*
- *"Peace of mind to stay in front of TV while I'm not at home."*

The Academy of Pediatrics (2001) recommends that television and video time is limited to a maximum of 2 hours per day. Despite these recommendations, it is estimated that the average child spends nearly 20 hours watching television weekly. It is estimated that approximately 80% of 8 to 16 year old children watch more than 3 hours of TV daily (Anderson et al., 1998). The increasing trend of sedentary behaviors often competes with time children spend being physically active. It has become an increasing trend for children to engage in hours and hours of sedentary activities such as television, computer

and video games. Several studies have found a positive association between the time spent viewing television and an increased prevalence of overweight children (Dietz & Robinson, 2005). Nationally representative data from the Add Health project indicated that the odds of becoming overweight were 40-50% higher for youth reporting high amount of television (Serdula et al., 1993). Dietz and Gortmaker (1985) reported a small but significant realtionship between television viewing and overweight status of children. Researchers found that the prevelance of obeisty in a large epidemiological sample of adolescents ages 12-17 increased 2% for each additional hour of television viewed (Dietz & Gortmaker, 1985). Few parents in the present study set limitations on their children's television viewing, and many cited the use of television as an enjoyable family activity. A strong need remains to educate parents on the benefits to implementing curret televsion viewing recommendations among their children.

Sedentary activities also increase or stimulate frequent eating or snacking. All parents showed concern when discussing the amount of time their children spend engaging in such sedentary activities. Parents reported:

- *"As soon as the TV comes on, she would go sit down and ask for a snack."*
- *"We usually make a snack and watch a movie."*
- *"If we don't all sit down for dinner, we sit in front of the TV."*
- *"Very rarely, only on a special occasion."*

Television viewing by children is directly correlated with consumption of less nutrient rich foods, consumption of foods advertised on television, and children's attempt

to influence their parent's food purchases (Salens et al., 2002). Television advertising includes intense marketing aimed at shaping nutritional beliefs, attitudes, and consumption patterns of youth (Kotz & Story, 1994). Kotz and Story (1994) found that 57% of all advertisements were for food, and 44% of those were foods classified in the fats, oils and sweet food group. The current challenge to decrease the prevalence of overweight children is so significant, that it is important to evaluate every sector of societal influences in order to help decrease the prevalence of overweight children.

How much physical activity per day does your child need?

Overall, parents agreed that participating in daily physical activity is an important factor contributing to a healthier lifestyle. Often times, parents can be a role model by engaging and influencing their children to be more physically active. However, parental involvement in family physical activity appears to be limited. Many concerns were identified as barriers to reaching the recommended level of physical activity on a daily basis. Concerns included neighborhood safety for many parents, as it is perceived that neighborhoods are no longer safe for their children to participate in free play. Parents reported the following comments:

- *"As much as humanely possible, as much as they can get."*
- *"At least one hour, the more the better."*
- *"My kids can't, because I'm at work and we won't get home until 5:30. Now when I get home they've had the TV all day, so they better go outside and find something to do."*

- "*I won't let her go outside by herself, if she wants to go on a walk, I go with her."*
- *If I can't see them, they don't go."*

Parents were able to identify many important benefits of physical activity. Reasons of importance included:

- *"Gives a better attitude, controls overall weight problem."*
- *"Prevents Type II Diabetes."*
- "*Calms her, focus better."*
- *"They wont be obese, they're healthier."*
- *"Builds their self-esteem."*
- "*Develop healthy habits."*

Parents reported several barriers related to incorporating adequate amounts of daily physical activity for their children. In today's society, it is common for many families to live very busy hectic schedules, resulting in a lack of time to participate in daily physical activity. Other barriers include; safety, limited recreational opportunities, and parental motivation have been identified. Reported comments included:

- "*There is no facility for our kids in this community to promote active health."*
- *"If I can't see them, they don't go."*
- *"Kids don't even have to take any physical education in school."*
- *"It has to be something the kids want to do."*

- *"I'm not going to push them because I know that it takes too much commitment and time so I won't let them."*
- "*She just makes choices to not be active.*

What kinds of things would you (parents) need to increase physical activity for your child?

- *"Motivation"*
- *"More structured community activities."*
- *"More time."*
- *"Has to be something the kids want to do, because I'm not going to push them because I know the time and dedication it takes."*

Overall reasons for lack of a healthy diet and physical activity

- *"Many families are not making the time for physical activity or enforcing kids to participate."*
- *"I think education is key."*
- *"Teaching parents how to make those healthier choices."*
- *"I like to feed people, and it's my fault, so my family is overweight."*
- *"We were raised to know a certain way."*
- *"Teach healthy portions and larger quantities of vegetables."*
- *"She's a big girl, not overweight."*

The role of parents is particularly critical to evaluate because parents directly determine the child's physical and social environment and indirectly influence behaviors, habits and attitudes through parental modeling. Parents can also become influential role models and address problems to overcome, barriers to change, and apply their parenting knowledge to influence a household that will practice healthy behaviors (Dietz & Robinson, 2005). The nature and pace of most families make it difficult to implement daily physical activity and adhere to a healthy diet. Some challenges many parents face include the stresses of daily living and time constraints that make healthful eating and daily physical activity difficult for many families to achieve (Devine, Connors, Sobal & Bisogni, 2003). Parents can influence many diet and physical activity behaviors that are associated with a child's possibility of developing obesity (Birch & Fisher, 1998). One prevention strategy is to enhance the effectiveness of parenting practices related to diet and physical activity behaviors of their children (Davison et al., 2003). Although it is known that parents cannot control all aspects of a child's day, they can moderate the type and availability of foods, feeding practices, the frequency of television and video game usage, and access to physical activity opportunities. Parental modeling of both eating habits and physical activity can also help shape children's values, beliefs, and behaviors (Birch & Fisher, 1998; Davison et al., 2003).

CHAPTER V

CONCLUSIONS

The purpose of this study was to collect parental perceptions to promote a healthier and more active lifestyle among their families. Overall, participants of the focus groups reported both common and unique opinions and beliefs about their feeding practices and physical activity regimens of their children. Regardless of variance in opinions, all parents expressed a clear desire to promote a healthier diet and physical activity routine for their children. In line with previous research, our results suggest that there are many factors influencing the eating behaviors and physical activity routines of families. Results of this study suggest the importance of addressing personal and environmental factors when planning interventions. This information will be useful to implement effective intervention strategies to encourage healthier active lifestyles among Oklahoma families.

The first objective of this study was to determine the perceptions, opinions, beliefs, and attitudes of parents regarding eating practices and physical activity routines of their children. Based on the results of this study, parents voiced many commonly held beliefs that would favor good health, such as adding more fruits and vegetables, removing junk foods (i.e. chips, soda, candy, salty snacks), and implementing healthier food preparation. Four key themes common to all focus groups were identified in relation to healthier food choices in the study: (a) lack of time, (b) increased expense of healthier food options, (c) loss of parental motivation, and (d) children's food preference. Parental responses were consistent with previous research that links child nutrition to family eating policies,

parental role modeling and availability and accessibility of food in the home. The present focus group findings indicated common themes such as: unhealthy feeding practices, concern about their children eating enough versus what foods their children were eating, time barriers leading to eating on the go, and desire to persuade children to eat more fruits and vegetables.

The second objective of the study was to identify barriers to a more active and healthier lifestyle among families. Parents expressed a number of contributing factors that hindered them from providing healthier diets for their children. For example, parents reported the stress of working and/or caring for their children contributed to decreased energy to think about what to prepare dinner. This often influenced parents to prepare meals that their children requested or resorting to the simplicity of fast food or restaurants. Food cost was also commonly reported by parents as a barrier to serve healthier meals. Parents perceived healthier food as being much more expensive versus convenient food items. It was commonly reported that parents were not going to purchase more expensive healthier foods, especially when their children were not going to choose healthier food options. Parents agreed that they placed much more concern on knowing their children ate something versus worrying about what their child ate. Also, parent's consistently reported time as a major barrier to offering and preparing healthier meals. The fast pace lifestyles of many families make it difficult to follow a healthier diet. In addition, many parents still cater to their children's food preferences. This may hinder children from adopting healthier food preferences during their childhood which can lead into adulthood.

However, parents were able to identify multiple intervention strategies that may encourage healthier lifestyles. For example, parents expressed the desire to learn healthier tastier food preparations, the ability to identify a simple carbohydrate versus complex carbohydrate and ideas to incorporate the addition of fruits and vegetables. To effectively reach the childhood population, it is very valuable to identify the needs of parents. Parents can influence many diet behaviors that are associated with a child's likelihood of developing obesity. One obesity prevention strategy for children is to enhance the effectiveness of parenting practices related to healthier behaviors. Although parents cannot control all aspects of a child's day, they can moderate the type and availability of foods, feeding practices, parental modeling, and eating dinner with the family to help shape children's values, beliefs and behaviors. These factors need to be addressed and explained in the design of a nutritional intervention to influence parents to implement healthier lifestyles for their children.

Nutrition education is a necessary tool for improving dietary behaviors of parents and their children. Findings from this study identified that parents had a basic understanding of what constitutes a healthy food versus unhealthy foods. Parents frequently reported the desire to learn how to prepare quick, healthier, and more appealing meals. For this reason, it is suggested that parents be involved in community nutrition education programs that provide parents with a clear understanding of how to incorporate quick healthy tasting meals for their family. Recent reviews of childhood overweight treatment and prevention programs indicated that intervention strategies which involved lifestyle changes including the family are much more effective in weight control than others (Summerbell et al., 2005). It is hypothesized that providing parents

with nutrition educational resources may contribute to easier lifestyle changes (Summerbell et al., 2005).

In the second part of the focus group, parents identified several barriers to implementing physical activity routines. Four key themes common to all four focus groups were identified as barriers in relation to physical activity in the study: (a) Safety, (b) Limited recreational activities, (c) Motivation and commitment and (d) electronic devices. Parents frequently reported that their families have adopted many sedentary behaviors and were not as physically active as they should be.

The first key theme commonly reported which involved barriers to physical was safety. The local environment including the school and community environment play an important role in shaping children's physical activity level. Parents reported that the local environment had an important role for encouraging children's physical activity. However, even for those communities that do provide opportunities for outdoor physical activities, parents agreed that general safety concerns are a barrier for their children's outdoor play. Parents reported not allowing their child to participate in outdoor play due to safety concerns. Parents agreed that unless they were present and attentive to their child's whereabouts, the child would be encouraged to play inside.

Despite parental concern regarding community safety, many parents reported the need for increased availability of recreational activities. For many Oklahoma families living in rural Oklahoma, there is a limited access to parks, sidewalks, and recreational community centers. Parents stated if more community recreational opportunity were available, it would make it easier to participate in more family physical activities.

Parental motivation and commitment level was also identified as a major barrier to children participating in an organized sport. It was often reported that parents were not interested in dedicating the time and commitment involved in organized sports. Therefore, parents often discouraged their children from participating in such activities. Organized sports contribute many benefits such as physical activity, self esteem, competition, and communication skills. It is important for parents to be aware of the benefits of dedicating their time to allow their children to participate in organized sports. Lack of parental motivation was also related to not participating in physical activities with their children.

Another common theme identified as a major contributing factor to sedentary behaviors included television viewing. Parents reported the television being a major contributor to sedentary behaviors among their entire family. Parents stated that the television took over after dinner, and many parents did not limit their child's television viewing time. Many other electronic devices in the home such as video games and computers displaced physical activity among children. Sedentary behaviors involving electronic devices are increasing and continue to be problematic for many parents. Parents reported television viewing and electronic devices displacing physical activities among their children. Parents need to become aware of the benefits of placing limitations on their children's television and electronic game usage.

Several key themes identified in this study suggest many barriers that need to be addressed when promoting physical activity among families. In order to effectively encourage children to be more active, parents must be involved to help encourage physical activity routines. Based on findings, it is suggested that parents become aware

of safe and fun activities that involve the entire family. Also, because safety was identified as a major concern, it would be suggested for educators to focus on educating parents about safe activities that are available within their local communities.

It has been suggested that the potential of implementing physical activity in the school environment cannot be overlooked. The school setting offers an ideal environment to implement healthy behaviors and include a parent-child intervention strategy. The school can be viewed as an opportunity to alter family perceptions of how to implement a healthier diet and incorporate physical activity into their daily lifestyle.

Overall, one of the most important themes surfacing from all focus group data, is parental reports that their children are not consuming healthy diets or engaging in enough physical activity. Therefore, it can be concluded that there is an increased demand for educators in the community to encourage families to implement healthier active lifestyles. Nutrition educators can apply focus group results to assess parent's perceptions, beliefs, and behaviors to make interventions relevant and meaningful for the target audience.

Implications for Practice

Innovative intervention strategies are needed in early childhood to halt the obesity epidemic. It is critical to educate parents on how to implement healthy eating and physical activity routines into their family's daily lifestyle. Oklahoma state educators, clinicians, and those who specialize in childhood education play a pivotal role in tackling the difficult mission of preventing and treating obesity. Several factors need to be considered when developing educational curriculum and intervention programs for children and their parents. For this reason, it is suggested that parents be involved in community nutrition education programs that provide parents with a clear understanding of how to incorporate quick healthy tasting meals and daily physical activity for their family. In addition, educators should implement family-based interventions where parents are involved in order to improve the effectiveness and implementation of healthy eating and physical activity among all family members.

The findings of the present study suggest that Oklahoma State Educators take several factors into consideration when educating children and their families. First, our findings support the need for educational materials that promote healthy eating to consider food cost, time involved in food preparation, promotion of appealing foods, mealtime behaviors and the motivation level of parents. Also, intervention programs designed to increase the frequency of family meals should be encouraged as often as possible. Educating parents about increasing family meal time can improve the diet and perhaps keep family members weight under control. In addition, it is important to educate

families on how to choose more healthful take-out foods and healthier food options while dining out.

When promoting physical activity among families, several factors should be considered. Our findings support the need to address neighborhood safety, recreational activities in various counties which are available, influence of electronic devices and the motivation level of parents. Also, because safety was identified as a major concern, it would be suggested for educators to focus on educating parents about safe activities that are available within their local communities. However, because each family's need may vary, the challenge will be to find effective interventions that can be generalized across different ages and environments.

Implications for Further Research

Future research needs to be conducted to determine the effectiveness of intervention strategies used to halt obesity. This will allow educational materials to be developed, accessible for parents and children in Oklahoma communities, and tailored for individual family needs. In addition, future research should be conducted to determine parent's perceptions and beliefs in various other geographic locations. With this, more state educators will be able to implement and adopt educational strategies that will be helpful for families and help decrease the prevalence of obesity.

Future research should also continue to explore different ethnic, age, gender groups, environmental factors, and parental physical activity and eating behaviors to identify specific barriers involved to implementing healthier lifestyles. Further research is also needed to identify additional barriers to fruit and vegetable intake to develop programs to encourage their intake. If further research is conducted addressing these issues, more information can be made available to parents that is specific to their life needs.

Based on our findings, we also suggest that future research be conducted to explore environmental influences in relation to overweight children. The education setting is one arena to develop practical strategies to prevent obesity in children. It is likely that intervention strategies will need to be established across a variety of settings to ensure consistent messages are relayed to children and their parents.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD

Oklahoma State University Institutional Review Board

Date:	Tuesday, May 22, 2007
IRB Application No	HE0732
Proposal Title:	Childhood Obesity Prevention/Intervention
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 5/21/2008

Principal Investigator(s

Asleigh Serrano
301 HES
Stillwater, OK 74078

Nancy Betts
301 HES
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☑ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Sue C. Jacobs, Chair
Institutional Review Board

APPENDIX B

ORIGINAL FOCUS GROUP SCRIPT

Centers for Disease Control and Prevention
Division of Nutrition and Physical Activity
Parenting Skills and Childhood Obesity
Discussion Guide
December 3-6, 2001

Focus Groups
Location:
December 3-4, 2001 Kansas City
December 5-6, 2001 Philadelphia

Time: 2 hours

Objectives:
1. Determine the perceptions, opinions, beliefs, and attitudes of parents regarding healthy eating practices.
2. Determine who is responsible for decisions concerning food choices in home.
3. Assess what parents are willing to do to prevent childhood obesity (change their own behavior).
4. Assess the incentives that will motivate parents to begin serving more healthy foods to their children.
5. Evaluate Picky Eater Tip Sheet.

Participant Instructions: Participants are asked by recruiters to bring in an object that symbolizes or captures who they are at this stage in their life (parents with young children). Participants are asked not to bring photos but rather something that gives an insight into how they feel about their own life.

I. Introduction- (10 min)

A. Moderators role
B. Purpose- to talk about healthy foods and children
C. Taping, confidentiality, viewers
D. Guidelines for group
E. Opening question- parents introduce themselves and tell the significance o f item they brought to share

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II. Introductory Questions (10 min)

Good
Bad

2. What do you think is your most important role in feeding your children?

3. a. In your family who decides what will be served at mealtime? (Decision)
Listen unaided then probe for:
Parent
Child
Teenage child
Other caregivers

b. Is this always the situation? When does this situation change? Under what circumstances does it sometimes change?

4. a. In your family who decides when you and your child will eat fast food? (Decision) What about the case of your younger child?

b. Is this always the situation? When does this situation change? Under what circumstances does it sometimes change?

III. Exploring Family Mealtime Habits- Projective Technique (25 min)
Purpose of Exercise: To understand the needs and the drivers in the home environment at mealtime. Give a deeper understanding of how parents deal with young children.

Methodology:
1. Guided visualization- sets the scene and mood at mealtime.
2. Capture visually (sketching, doodle, writing, drawing) and describe verbally the feelings, scenes, and experiences associated with mealtimes with young children.

Areas to Explore
1. Feelings: How I feel as a parent at this stage in my life
2. Life Situation: My living conditions
3. Activities: Things I am doing
4. Topic: My feelings about food
5. Topic: My feelings about feeding my family
6. Topic: The role of dinner in family life
7. Topic: Foods typically eaten

IV. Assessing Behavior Patterns and Circumstances that Lead to Obesity in Children (55 min)

1a. How do you feel about the content of the meals your children currently eat? I am talking about healthy foods now?

Are there foods you would add to their meals? Which healthy foods?

Are there foods you would remove from their meals? Which foods?
Listen unaided then probe for:

- Fruits and vegetables
- Dessert
- Snacks (snack = any in-between meal eating)
- Fast food
- Water
- Soda, fruit drinks, and other sweet drinks

b. Have you made any healthy or unhealthy changes in foods you serve to your family over the last month or so? What were they? Why did you make them?

2. a. What ways can you think of to change the kind of meals your children eat to make them healthier? Please explain.

b. Are there things that effect your ability to offer healthier food choices?
Listen unaided then probe for:

- Fast food
- Food available

c. How many of you are soda drinkers? What would make you stop buying soda for your home?

What about chips? Would make you stop buying high-fat, high-caloric chips for your home?

If No, then what would it take for you to change your behavior and stop purchasing soda/high-fat foods and bringing them into the home?

3. Do you have snacks at home for your children? What are they? What times of the day do your children get snacks?

If your doctor suggested you plan 2 snacks a day could you do that?
1 Would you limit your child to 2 snacks a day?
2. How would you do this?

4. Do you think that it is more important 1) to provide healthy foods and beverages or 2) to make sure your child eats and/or drinks something? (Responsibility)
Listen unaided then probe for:

Level of responsibility
Feelings about the need to feed

5.What do you feel is your role in establishing a routine for your children so that they eat healthy meals and snacks served at regular times of the day? What does routine mean to you? Do you have a routine? What kind of routine?
Listen unaided then probe for:

How establish routine
Buying healthy foods
Not arguing about food at mealtimes
Television on or off during meals and snacks
Family members eating together

Do you do any preplanning for meals? What does preplanning mean to you? Can you tell me what kind of preplanning you do? Weekly, daily, hourly? What percent of the time do you preplan? Are there benefits to preplanning versus spontaneously prepared meals?

6. Do you think there are benefits to having a routine? What are the benefits? Having a routine for your children can mean that parents have to give up something from their lives. Is that true for you? If so what do you have to give up? Listen for any psychological issues and probe these?

7. a. Is the television on or off during meals or snacks? Does your child eat in front of the television during meals or snacks?

b. How much time does your child spend watching television? The American Academy of Pediatrics recommends no more than 2 hours of television a day for children. Would you be able to limit your child to 2 hours/day? Could you limit your child to 2 hours/day? How would you do this? Will you go home and do this?

c. Does you child have a television in his/her bedroom? Would you or could you remove the television from your child's room? Is your young child watching TV in your older child's bedroom?

8. If you wanted to make family meals even healthier would you eat more fruits and vegetables because your family was having more fruits and vegetables? How would you get the family to eat more fruits and vegetables? (Commitment to change behavior)
Listen unaided then probe for:

Drink water or skim milk instead of soda
Eat baby carrots instead of potato chips

APPENDIX C

REVISED FOCUS GROUS SCRIPT

Table 1. Focus group questions for the determination of parental perceptions regarding healthy eating of their children.

Ice Breaker

1. Tell us your first name and a little bit about your children

II. **Opener**

1. Do you believe that it is more important to make sure your child eats ***something*** than it is to worry about ***what*** your child eats? (probe for why)

    a. How do you respond if your child won't eat a food item? (probe for why)

2. What are the best things about mealtimes with your children?
3. What are things you don't like to happen at mealtimes?

III. Food and meals

2. In your family, who decides what will be served at mealtime?

    a. Is this most often the case? Under what circumstances would it not be the case?

3. In your family, who decides when you and your children will eat fast food?
    a. Is this most often the case? Under what circumstances would this not be the case?

4. How do you feel about types of foods your children currently eat?
    a. Do you feel your children's meals include all of the foods they need to stay healthy? (provide complete nutrition?)

5. Are there foods you would ***add*** to their meals and snacks to make them healthier? (probe for why)

6. Are there foods you would ***remove*** from their meals and snacks to make them more healthy? Which foods (probe for why)?

7. Is it difficult to provide your children healthier food choices (probe why it is or isn't difficult)?

Table 2. Focus groups questions for the determination of parental perceptions regarding physical activity of their children.

IV. Physical Activity

1. What is your family's favorite physical activity to participate in?
2. In your family, who decides what, when and how long your child does physical activity?
    a. Is this mostly the case?
    b. Under what circumstances would this not be the case?
3. When you are home, about how much time does your child spend watching TV, on the computer, or playing video games?
    a. What about when you aren't at home? Do you think your child spends more time on the computer, watching TV or playing video games?
4. Does your child eat meals while watching TV or playing electronic during meals? Snacks?
5. Would you be able to limit your child's TV viewing to 2 hours per day? (if not, why? If yes, how?)
6. I want you to think about children in general, how much time per day should a child spend in activities where he or she is moving around (spend in physical activities)?
7. Does your child get that much physical activity? If not, what kinds of things prevent your child from being active?
8. Why is physical activity important for children?
    a. What do you think are some of the health benefits for children that come from physical activity?
9. What do you think you would need to get a physical activity routine started for your children? (or what would you need to increase your child's physical activity level?)

V. Close

I'm sure most of you are aware that obesity is a real problem for many of our children, maybe not for your kids, but nationwide kids weigh too much and it seems as though they aren't getting enough physical activity and they aren't eating the foods that are healthy for them. The point of this study is to try to get at why -To get at some of the family reasons and other reasons why kids are this way.

VITA

Ashleigh Seybold

Candidate for the Degree of

Master of Science

Thesis: PARENTAL PERCEPTIONS AND BARRIERS TO A HEALTHIER LIFESTYLE AND PHYSICAL ACTIVITY AMONG SCHOOL-AGED CHILDREN IN OKLAHOMA

Major Field: Nutritional Sciences

Biographical:

Personal Data: Born in Watsonville, California on November 28, 1984, the daughter of Gregg and Rhonda Serrano.

Education: Graduated from Tahlequah High School, Tahlequah, Oklahoma in May 2002; received Bachelor of Science degree in Family and Consumer Sciences from Northeastern State University, Tahlequah, Oklahoma in December 2005. Completed the requirements for the Master of Science in Nutritional Sciences at Oklahoma State University, Stillwater, July, 2008.

Experience: Completed the Dietetic Internship at Oklahoma State University in July 2007; passed the registration examination to become a registered dietitian in May 2008. Employed by Pacific Pulmonary Services as a medical sales representative.

Professional Memberships: American Dietetic Association, Sports, Cardiovascular, and Wellness Nutritionists, Colorado Dietetic Association.

Name: Ashleigh Seybold Date of Degree: July, 2008

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: PARENTAL PERCEPTIONS AND BARRIERS TO A HEALTHIER LIFESTYLE AND PHYSICAL ACTIVITY AMONG SCHOOL-AGED CHILDREN IN OKLAHOMA

Pages in Study: 86 Candidate for the Degree of Master of Science

Major Field: Nutritional Sciences

Scope and Method of Study: The purpose of this study was to assess parental perceptions to promote a healthier and more active lifestyle among their families. The objectives of this study were to determine the perceptions, opinions, beliefs, and attitudes of parents regarding the eating practices and physical activity routines of their children. Secondly, to identify the barriers included to a more active and healthier lifestyle among families and to determine parental eating and physical activity practices and beliefs. Information gained from this study can be used as a foundation for educators to develop interventions which allow parents to implement healthier lifestyle behaviors. The population consisted of a convenience sample of 31 parents who have school aged children (5-18 years old) in Southeast Oklahoma. Four focus groups were conducted at hosted sites which included Tulsa, Tishomingo, Stillwell and Atoka. This study used grounded theory qualitative research to obtain the desired data. Parents participated in a topic guided focus group discussion about eating practices and physical activity routines among their family. Each focus group consisted of approximately 4-6 participants, and the focus group questions were divided into two sections; (1) food and meal, and (2) physical activity. Each focus group was audio recorded and transcribed verbatim. After focus groups were transcribed, participant responses were categorized into emerging themes and patterns. Summary of themes were compiled for final review.

Findings and Conclusions: Based on the results of this study, parents need to be educated on dietary recommendations which include ideas on how to provide children with nutrient-dense meals that are affordable, quick and convenient. Parental food modeling should be encouraged to implement healthier food behaviors among their children. Physical activity recommendations need to include educating parents on how to provide opportunities and encouragement for their children to be physically active while reducing their children's television and video game time. Parents need to be educated on safe family activities that are available in their local environment. Therefore, there is a need for Oklahoma educators to develop educational materials that meet the needs of parents in their local communities.

ADVISER'S APPROVAL: Dr. Nancy Betts